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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/700,859 | 11/04/2003 | Young H. Kim | CL1983 US NA | 6315 |
| 43693 7590 01/12/2007 INVISTA NORTH AMERICA S.A.R.L. THREE LITTLE FALLS CENTRE/1052 2801 CENTERVILLE ROAD WILMINGTON, DE 19808 | | | EXAMINER | |
| | | | SERGENT, RABON A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1711 | |
| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE | | |
| 3 MONTHS | 01/12/2007 | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/700,859 | KIM ET AL. | |
| | Examiner | Art Unit | |
| | Rabon Sergeant | 1711 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 30 October 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 15 and 16 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-14 and 17-19 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 04 November 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/27/04</u> . | 6) <input type="checkbox"/> Other: _____ . |

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1. Applicants' responses, filed July 24, 2006 and October 30, 2006, to the Election of Species requirement, are acknowledged. Consonant with applicants' election, the species, polyether polyol derived from tetrahydrofuran and alkylene oxide, has been examined on the merits. Claims 15 and 16 have been withdrawn from further consideration as being drawn to non-elected species.

2. Claims 1-14 and 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Within claim 1, within the definition of R⁴, the use of the language, "may be", renders the claims indefinite, because it is unclear if or to what extent the language denoted by "may be" is optional.

Within claims 1, 7, 10, and 18, applicants have claimed a mole percent quantity of urea units; however, applicants have failed to specify the basis for the claimed percent quantity. It is unclear if the percent quantity is based upon the total moles of polymer or some other entity.

3. Though claim 15 has formally been withdrawn from further consideration, it is noted that the use of "about" in association with "8" and "20", within the definition of "n", renders the claims indefinite, because it cannot be determined exactly what values are encompassed by the language; therefore, the exact structure of the formula cannot be determined.

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection

is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-14 and 17-19 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-19 of copending Application No. 10/700,857. Although the conflicting claims are not identical, they are not patentably distinct from each other because each set of claims encompasses the same polyurethane polymer.

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This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-8, 10-14, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Soto et al. ('325).

Patentees disclose polyurethane aqueous dispersions wherein the polyurethane is produced from the reaction of diisocyanates, wherein aliphatic or cycloaliphatic diisocyanates are preferably used; polyols, including copolymers of tetrahydrofuran and ethylene oxide or

propylene oxide; an ionic group-containing reactant, such as dimethylolethylene oxide; and chain extenders, wherein water or aliphatic diamines are preferred. Regarding the polyol component, patentees further disclose that polytetramethylene polyols are preferred, and the position is taken in view of this disclosure that this preference extends to any of the disclosed polyols derived from tetrahydrofuran. Furthermore, patentees disclose that aromatic isocyanates may be employed, though they are not preferred. See abstract; column 5, lines 3-18; column 6, lines 41-43, 51, and 52; column 7, lines 39+; column 8; column 9, lines 17-27; and column 10, lines 36-65. Regarding applicants' claimed urea group content, the following positions are taken. The claimed urea group content will be realized when aliphatic or cycloaliphatic diisocyanates are used with either the water or aliphatic diamine chain extenders, since no urea groups will result that contain the claimed aromatic hydrocarbon radical. The claimed urea group content will be realized when aromatic diisocyanates are used with the preferred water chain extender, since no urea groups will result that contain the claimed aliphatic hydrocarbon radicals. The reference is considered to be anticipatory for the rejected claims in view of the cited preferred teachings.

8. Claims 1-8, 10-14, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Anand et al. ('864).

Patentees disclose polyurethane aqueous dispersions wherein the polyurethane is produced from the reaction of aliphatic or cycloaliphatic diisocyanates or a mixture of aliphatic or cycloaliphatic diisocyanates and aromatic diisocyanates; polyols, including copolymers of tetrahydrofuran and ethylene oxide or propylene oxide; an ionic group-containing reactant, such as dimethylolethylene oxide; and chain extenders, wherein water or aliphatic diamines are preferred. Regarding the polyol component, patentees further disclose that polytetramethylene

polyols are preferred, and the position is taken in view of this disclosure that this preference extends to any of the disclosed polyols derived from tetrahydrofuran. Regarding the use of aromatic diisocyanates, applicants disclose at column 7, lines 54+ that the aromatic diisocyanates are preferably used in combination with aliphatic or cycloaliphatic diisocyanates in such quantities that the disclosed, resulting prepolymer will have terminal aliphatic or cycloaliphatic isocyanate moieties. See abstract; column 7, lines 54+; column 8, lines 1-6, 23, 24, 29-32, and 66+; column 11, lines 13-34; column 12, lines 62+; column 13, lines 59-61; and column 14, lines 1-14. In view of the preferred use of water or aliphatic diamines as chain extenders and the preferred termination of the prepolymer with aliphatic or cycloaliphatic isocyanates groups, applicants' claimed urea group content will be realized, since the resulting urea groups will lack the claimed aromatic hydrocarbon radical. The reference is considered to be anticipatory for the rejected claims in view of the cited preferred teachings.

9. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soto et al. ('325) or Anand et al. ('864), each in view of Berger et al. ('310).

As aforementioned within paragraphs 7 and 8, the primary references disclose polyurethaneurea polymers that are considered to meet applicants' claimed polyurethaneurea polymers; however, the primary references are silent with respect to their compositions containing a surfactant. Still, the use of surfactants or emulsifying agents to promote polyurethane dispersion was known at the time of invention as evidenced by the teachings of Berger et al. at column 6, line 60 through column 7, line 69. Therefore, since it has been held *prima facie* obvious to utilize a known compound for its known function, the position is taken that it would have been obvious to incorporate surfactants or emulsifying agents within the

polyurethaneurea compositions of the primary references for their art recognized purpose and function. *In re Linder*, 173 USPQ 356. *In re Dial et al.*, 140 USPQ 244.

10. Claims 1-3, 5, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Taub ('131).

Patentee discloses an urea/urethane polymer produced by reacting a stoichiometric deficient amount of aromatic diisocyanate with a polyol, wherein a preferred polyol is a copolymer of propylene oxide and tetrahydrofuran, to yield a hydroxy terminated prepolymer, wherein the resulting prepolymer is reacted with an aliphatic diisocyanate to yield an aliphatic isocyanate group terminated prepolymer, which is then chain extended with p-menthane-1,8-diamine. See abstract and column 2, lines 54-56. Applicants' claimed urea group content will be realized, since the resulting urea groups of Taub will lack the claimed aromatic hydrocarbon radical.

11. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taub ('131) in view of Pechhold ('850) or Pruckmayr ('567).

As aforementioned within paragraph 10, Taub discloses an urea/urethane polymer that is considered to meet applicants' claimed polymer; however, while Taub discloses polyol copolymers of propylene oxide and tetrahydrofuran, Taub fails to disclose a copolymer derived from ethylene oxide and tetrahydrofuran. Still, the use of such copolymer polyols within polyurethane compositions was well known at the time of invention. This position is supported by the teachings of the secondary references. See abstract within Pechhold. See column 1, lines 9-12 and column 2, lines 25+ within Pruckmayr. Therefore, the position is taken that it would have been obvious to utilize such well known, chemically and structurally similar copolymer

polyols, to those of the primary reference, within Taub, so as to arrive at the instant invention.

One of ordinary skill in the art would have reasonably expected that the copolymer polyol of the secondary references could be substituted for the copolymer polyol of Taub and still yield a viable composition.

12. Claims 1-3, 5, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Bethea et al. ('492).

Patentees disclose urea/urethane polymers produced from the reaction of isocyanate terminated prepolymers with aromatic diamines, wherein the prepolymer is produced from the reaction of aromatic diisocyanates with copolymers of propylene oxide and tetrahydrofuran. See abstract; column 2, lines 32+; column 3, lines 50-60; and column 4, lines 53+. Applicants' claimed urea group content will be realized, since the resulting urea groups of Bethea et al. will lack the claimed aliphatic hydrocarbon radical.

13. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Axelrood et al. ('999).

Patentees disclose urea/urethane polymers produced from the reaction of a copolymer of ethylene oxide and tetrahydrofuran with diisocyanates and diamines, wherein the preferred diisocyanates and diamines are aromatic. See abstract; column 3, lines 71 and 72; and column 4, lines 24 and 25. Applicants' claimed urea group content will be realized, since the resulting urea groups of Axelrood et al. will lack the claimed aliphatic hydrocarbon radical.

14. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Pechhold ('100).

Patentees disclose urea/urethane polymers produced from the reaction of a copolymer of ethylene oxide or propylene oxide and tetrahydrofuran with diisocyanates and diamines, wherein

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the preferred diisocyanates and diamines are aromatic. See abstract; column 1, lines 49+; column 3, lines 51-54; and column 4, lines 39-43. Applicants' claimed urea group content will be realized, since the resulting urea groups of Pechhold will lack the claimed aliphatic hydrocarbon radical.

15. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Robinson ('293).

Patentees disclose urea/urethane polymers produced from the reaction of a copolymer of ethylene oxide or propylene oxide and tetrahydrofuran with diisocyanates and diamines, wherein the preferred diisocyanates and diamines are aromatic. See abstract; column 1, lines 27+; column 3, lines 9-12; and column 4, lines 1-5. Applicants' claimed urea group content will be realized, since the resulting urea groups of Robinson will lack the claimed aliphatic hydrocarbon radical.

16. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Shioya et al. ('893).

Patentees disclose urea/urethane polymers produced from the reaction of a copolymer of ethylene oxide and tetrahydrofuran with diisocyanates to yield a prepolymer, which is then cured with a diamine, wherein the preferred diisocyanates and diamines are alicyclic. See abstract; column 2, lines 19+; and column 3, lines 29-37 and 47-57. Applicants' claimed urea group content will be realized, since the resulting urea groups of Shioya et al. will lack the claimed aromatic hydrocarbon radical.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (571) 272-1079.



RABON SERGENT
PRIMARY EXAMINER